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WINROCK INTERNATIONAL
Putting Ideas to Work

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Submit to: 1605bguidelines.comments@hq.doe.gov

Dear Mr. Friedrichs,

Thank you for this opportunity to submit written comments on the Interim Final General Guidelines and Draft Technical Guidelines for the voluntary reporting of greenhouse gas emissions and emission reductions under section 1605(b) of the Energy Policy Act.

Winrock International is a nonprofit 501(c)3 headquartered in Little Rock, Arkansas. Winrock's Ecosystem Services group (http://winrock.org/what/ecosystem.cfm) specializes in measurement and monitoring of terrestrial carbon sequestration for a broad range of electric utility, governmental, nongovernmental and forest industry clients. Winrock has provided carbon-related services to clients such as American Electric Power, Entergy, Cinergy, Dynegy, the Electric Power Research Institute, USAID, US Department of Energy, US Forest Service, the World Bank, and international conservation organizations. Services include project-level measurement and monitoring plans, carbon baseline development, and evaluation of carbon market opportunities at the State and regional level. We have worked with the Department of Energy and the Forest Service on the revision of DOE's 1605(b) Greenhouse Gas Accounting Rules, specifically the Guidelines for Forestry Sector and measurement protocols for projects and entities in this sector. Winrock's peer-reviewed methods for carbon measurement and monitoring are currently in use on approximately 2.5 million hectares worldwide. Staff participate in global discussions about methods and standards for carbon measurement and are familiar with the requirements of most operating and developing markets.

Winrock International as a nonprofit organization has been devoted to developing and taking measurements that are easy and cost effective to apply but represent a genuine impact on net carbon dioxide emissions. It is logical that the US Government would have the same purpose in the 1605(b) process. As long as emissions, avoided emissions and sequestration are recorded at a high standard then there is a prepreparation for any future regulatory environment and for the participants to enter into trading markets. 1605(b) should seek the same level of integrity and accuracy that is being pursued in the international arena and in the US in California (California Climate Action Registry) and in the Chicago Climate Exchange (CCX). For this purpose the highest methodology should be followed, which means physical measurement wherever possible. If all reporting is derived from models and look-up tables then the long term value and even the atmospheric value is limited.

The following are our comments on the Interim Guidelines:

GENERAL GUIDELINES

2002 registration limit

Referenced Section:
II.B.3.b: Limiting registration to post-2002 reductions; 300.12 (b) Registration of emission reductions.
Pages 19-20, 91

Guidelines

In the December 5, 2003 General Guidelines, DOE has proposed to permit registration of only those emissions reductions achieved after 2002. DOE notes that "most public comments opposed restricting registration to post-2002 reductions. Most argued that the revised guidelines should provide full recognition to any reduction achieved after the statutory base year of 1990, as long as the entity complied with the requirements of the revised guidelines… The restriction is intended to focus the program on recent and future efforts to reduce greenhouse gas emissions, rather than on actions taken many years ago. Limiting registered reductions to those achieved after 2002 will also provide an indication of reporting entities' contributions to the President's goal of reducing the greenhouse gas emissions intensity of the US economy by 18% between 2002 and 2012. In addition, this forward-looking focus helps enhance the transparency and verifiability of reported data. Even if the guidelines permitted entities to register reductions achieved prior to 2003, DOE believes it is unlikely that most entities would be technically capable of meeting all the requirements of the revised guidelines for earlier years, unless they already had extensive emission measurement and recordkeeping processes in place. The revised General Guidelines still permit reporting of historical activity, however, and therefore fully comply with the statutory requirements of section 1605(b)."

Winrock Comment

We believe this restriction constitutes a penalty for voluntary early action taken by many of the potentially reporting and registering entities. Many actions to reduce or offset emissions dating to long before 2002 will be in effect de-valued by this restriction, since such actions will be eligible for reporting but not registration.

A distinction is made between emissions/sequestration actions that are registered and those only reported, which is reinforced by the more demanding requirements in the Draft Technical Guidelines for accuracy, reliability, and verifiability of registered actions. The implication is that registered credits are likely to be viewed as more credible and in fact have higher regulatory and financial value under future regulatory regimes, markets and possible cap-and-trade systems.

Entities that have undertaken – and made substantial investments – in such actions prior to 2002 have done so in the good-faith belief that these actions would produce real and concrete benefits for them in the future, rather than being viewed merely as "actions taken many years ago" or "historical activity" that could be reported but not registered. Finally, some of these entities have invested considerable resources to put in place extensive emission measurement and recordkeeping processes that may allow them to meet all the requirements of the revised guidelines.

Solution

We would therefore argue for allowing registration of all reductions achieved after the statutory base year of 1990, as long as registering entities are able to meet all requirements of the revised guidelines.

TECHNICAL GUIDELINES

1. Rating System

Referenced Sections:
1.H.4.3 Agricultural Soil Carbon Emissions and Sequestration
Pages 196-206
1.I.2.6 Forests Basic Estimation Methods
Pages 219-227

Guidelines

Agriculture-
This section proposes the use of generalized CO_2 emissions and sequestration factors by climate region and soil type, multiplied by an area cultivated to yield an estimate of total emissions or sequestration. In the case of sequestration, sequestration rates are taken from the midpoint of published ranges for the sequestration potential of agricultural management practices, and a single rate is assumed to apply each year for 20 years as long as the management practice is implemented continuously.

To achieve an "A" or "B" rating for inventory of agricultural emissions and sequestration, which on average would qualify for registration, proposed estimation methods include soil carbon models (COMET) based on generalized land resource regions, and direct soil carbon measurements. In both cases, estimation methods achieving a level of uncertainty less than 15% receive an "A" rating.

Forestry-
This section gives an overview of estimation methods for CO_2 emissions and sequestration in forestry projects, including look-up tables, models, and direct measurements. The rating system for these estimations given at section 1.I.2.6.4 indicates that it is possible for an entity to achieve an "A" rating using only look-up tables validated with independent data for the specific site and management conditions, an approved model validated with site-specific data, or direct sampling. It is possible to achieve a "B" rating using a parameterized approved model or the COLE model.

Winrock Comment

In general, we would argue for higher standards including requirements for direct field measurements, wherever feasible and reasonably cost-effective, for all emissions and sequestration that will be registered, as these registered quantities are likely to form the basis for future regulation and trading mechanisms. Where models are used, they should be verified at regular intervals through field data collection. In the case of agriculture, where direct measurements may represent an unreasonable burden for the individual farmer, this responsibility could be placed on the Aggregator.

Although this method is given a 'C' rating, we believe the use of generalized CO_2 emissions and sequestration factors to estimate emission reductions in agriculture is insufficiently validated by field measurements to contribute to any portion of an entity's registered emissions. Moreover, the

sequestration factors in Table 1.H.23 combine into single categories a wide range of activities for agricultural and rangeland management, while particular entities' activities, although they might fall in the general categories, could vary considerably in their actual sequestration impact. This also argues for more specific measurement and estimation methods.

We believe too much reliance on look-up tables and models, and the ability to achieve an overall rating of 3.0 sufficient to register emissions/sequestration using only these means, leads to an unacceptable level of uncertainty in the accuracy of carbon emission reductions.

We believe this approach does too little to create the desired level of accuracy and credibility for forestry projects in the 1605(b) system and in future markets that may grow out of it. It is not clear that validating look-up tables with "independent data for the specific site and management conditions" would necessarily require any minimum quantity of field measurements, level of precision, or ongoing monitoring measurements; an entity could meet this requirement and achieve an "A" rating with a small number of one-time field measurements. We also believe a modeling approach, even if validated with site-specific data, should be insufficient to achieve an "A" rating. "A" ratings for these methods could counterbalance even rougher estimation methods in other areas, allowing an entity to achieve an overall score of 3.0 and register reductions with very limited direct measurements.

Solution

We would propose a simplified rating system: in order to receive an "A" rating, entities should be required to conduct direct carbon measurements; to receive a "B" rating, use of a well-calibrated model would qualify; any other estimation methods should receive a "C" rating. This would promote greater accuracy and credibility of the registered quantities that are likely to form the basis for future regulation and trading mechanisms.

Entities wishing only to report and not register emissions/sequestration could then choose rougher, less costly estimation methods, but entities wishing to register would be required to adopt a combination of direct measurements and well-calibrated models.

2. Preservation Projects
Referenced Sections:
1.H.4.3 Agricultural Soil Carbon Emissions and Sequestration
Pages 196-206
1.I.4.5 Forest Preservation
Pages 234-235

Guidelines

Entities may report and register conservation of carbon stocks placed under permanent conservation easements or deed restrictions, at the rate of 1/100th of the base period carbon stocks on those lands plus any incremental carbon stock gains in the reporting year.

Winrock Comments

We believe the reporting of 1/100th of the base period carbon stocks per year to be an arbitrary rate that should be validated through some requirement for ongoing monitoring. Moreover, there

is no requirement for a baseline methodology to establish site-specific rates or locations of forest conversion. This method will not encourage ongoing improvement in the accuracy and credibility of reporting for forest preservation activities under the 1605(b) program.

This approach does not reflect the impact of conservation activities on the atmosphere. It has the consequence of encouraging investment in conservation activities, which is worthy but perhaps should fall under a program separate to 1605(b). This approach will also exclude participants from future regulatory environments which actually seek to trace the atmospheric impacts of conservation activities.

Solution

A baseline rate of deforestation is required. This can be attained either through regional modeling of deforestation or through using region specific look-up values (c.f. the approaches of the California Climate Action Registry [CCAR]).

3. Management of hazardous fuels as an emissions reductions activity

Referenced Section:
1.I.1.1 Carbon Sequestration by the Forestry Sector
Pages 212-213

Guidelines

This section provides a list of potential greenhouse gas emission sources, emission reduction activities, and carbon sequestration activities in the forestry sector. Omitted from this list is one potential activity that we believe should be included: improved management of hazardous fuels to reduce greenhouse gas emissions from wildfire.

Winrock Comment

This activity could provide multiple emissions reductions/sequestration benefits:

- Reduced greenhouse gas emissions from combustion due to a smaller area burned and less severe fires (greenhouse gas emissions from wildfires may include CO_2, CH_4 and N_2O);
- Protection of carbon stocks in large trees by preventing high-intensity crown fires;
- Reduced loss of carbon stocks in forest floor litter;
- Reduced loss of soil carbon;
- Carbon sequestration through enhanced growth in the residual stand;
- Where fuels are removed to a biomass energy facility, additional emissions reductions benefits will come from more complete combustion and use of emissions controls, meaning lower emissions than if the same biomass were burned in a wildfire or a prescribed burn; and if a utility's next available option to purchase the same megawatts is a higher carbon-intensity option such as coal or natural gas, there will be an additional emissions-reduction benefit by fuel substitution.

The latter category of displaced fossil fuel emissions is accounted for in other sections of the Draft Technical Guidelines, but the possibility of reduced emissions from wildfire and reduced loss of forest carbon stocks attributable to hazardous fuels reduction activities is nowhere mentioned in these guidelines.

Solution

Hazardous fuel management should be included as an emissions reduction activity. Methods are currently being developed for accurate accounting but the potential environmental, atmospheric and economic benefits make this activity a worthy addition immediately.

4. Biomass energy

Referenced Section:
1.I.4.4 Short-Rotation Biomass Energy Plantations
Page 234

Guidelines

This section notes several emissions/sequestration effects associated with biomass energy plantations, including displaced fossil fuel emissions, carbon capture by the new plantation, increased carbon sequestration in soil, fossil fuel emissions associated with planting, management, harvesting and transportation of biomass fuel, and loss of carbon from the soil and litter pools due to harvesting disturbances. It also notes that "(b)iomass energy plantations also occupy an intermediate position between forestry and the electricity supply sector. For guidance in making estimates, reporters should consult the Technical Guidelines for the electricity supply sector regarding emissions from biomass fuels and the displaced fossil fuels."

Winrock Comment and Solution

The referenced sections of the Draft Technical Guidelines for estimating emissions in the electricity sector provide a useful mass-balance method for estimating emissions from fuels such as propane, natural gas, oil and coal (section 1.C.2). However, this section does not provide a similar example for biomass fuel. Assuming biomass has the generalized chemical formula $C_6H_{12}O_6$, then by the method given in that section, biomass should be about 40% carbon by weight:

(6*12)/((6*12) + (12*1) + (6*16)) = 72/180 = 0.4,

so that one ton of biomass burned (assuming complete combustion) might produce about 0.4 tons carbon, or 1.47 tons CO_2. Actual CO_2 emissions would be estimated by the formula given in the same section:

CE = *QF* * *EF* * *FC*, where
CE = carbon emissions (tons of carbon or carbon dioxide)
QF = quantity of fuel (measured in weight, volume, or heating value)
EF = emissions factor (a ratio, tons carbon/per "unit" of fuel, as above)
FC = fraction combusted.

We suggest the addition of such an example, either in section 1.C.2, section 1.C.5.5 on Biogenic Fuels (Bagasse, Wood, Wood Waste, and Ethanol), or in the relevant part of the forestry section. This would provide additional guidance to entities in comparing estimated emissions from biomass to emissions from the quantities of natural gas or coal required to produce the same quantity of energy, with the emissions benefit coming from the fact that biomass is 40% carbon by weight vs. propane at 82%, natural gas at 75% or coal at 85% as noted in section 1.C.2.

Such guidance will be useful to entities estimating emissions reductions, both from projects where biomass energy displaces energy generated from fossil fuel alternatives, and where co-firing biomass with a fossil fuel such as coal displaces some proportion of the fuel input in an electricity generation facility.

Thank you again for this opportunity to provide comments. Should you have questions or require further information, please do not hesitate to contact us.

Sincerely,

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